

WHAT IS CLAIMED IS:

1. A plasma display panel comprising:

(a) a first substrate;

5 (b) a second substrate spaced away from and facing said first substrate;

(c) at least one scanning electrode formed on a surface of said first substrate which surface faces said second substrate, and extending in a first direction;

(d) at least one sustaining electrode formed on said surface of said first substrate and extending in parallel with said scanning electrode;

10 (e) a dielectric layer formed on said first substrate, covering said scanning and sustaining electrodes therewith; and

(f) at least one data electrode formed on a surface of said second substrate which surface faces said first substrate, and extending in a second direction perpendicular to said first direction,

15 display cells being arranged at intersections of said scanning and sustaining electrodes and said data electrode,

each of said scanning and sustaining electrodes being comprised of a transparent electrode,

said dielectric layer being comprised of a transparent dielectric layer,

20 said dielectric layer having a high-capacity portion having a capacity higher than that of the rest of said dielectric layer, said high-capacity portion being spaced away from a discharge gap and extending in said first direction,

each of said scanning and sustaining electrodes being formed with an opening between said discharge gap and said high-capacity portion.

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2. The plasma display panel as set forth in claim 1, wherein each of said scanning and sustaining electrodes is formed with a second opening at an opposite side of said discharge gap about said high-capacity portion.

3. The plasma display panel as set forth in claim 2, wherein said opening and said second opening are substantially identical in shape to each other.

4. The plasma display panel as set forth in claim 1, wherein said high-capacity portion has a thickness smaller than a thickness of the rest of said dielectric film.

5. The plasma display panel as set forth in claim 4, wherein said scanning and sustaining electrodes are formed separately in each of said display cells, and are electrically connected to one another, respectively, through a bus electrode extending in said first direction, and said high-capacity portion is formed above said bus electrode.

6. The plasma display panel as set forth in claim 5, wherein said bus electrode has a width smaller than a width of said scanning and sustaining electrodes.

7. The plasma display panel as set forth in claim 5, wherein said bus electrode passes a center of said scanning and sustaining electrodes in said second direction.

8. The plasma display panel as set forth in claim 5, wherein said bus electrode is located at a distance in the range of  $120\ \mu\text{m}$  and  $300\ \mu\text{m}$  both inclusive from a centerline of said discharge gap.

9. The plasma display panel as set forth in claim 1, wherein said high-capacity portion is comprised of a dielectric layer having a dielectric constant higher than that of the rest of said dielectric layer.

10. The plasma display panel as set forth in claim 9, wherein said scanning and sustaining electrodes are formed separately in each of said display cells, and are electrically connected to one another, respectively, through a bus electrode extending in said first direction above ends of said scanning and sustaining electrodes which end is located remote from said discharge gap.

11. The plasma display panel as set forth in claim 1, wherein said scanning and sustaining electrodes are connected to each other, respectively, across adjacent display cells in said first direction.

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12. The plasma display panel as set forth in claim 5, wherein said opening is located in symmetry with said second opening about said bus electrode.

13. The plasma display panel as set forth in claim 1, wherein said opening has a shape of a rectangle having sides each having a length equal to or greater than  $50\ \mu\text{m}$ .

14. The plasma display panel as set forth in claim 1, wherein said second opening has a shape of a rectangle having sides each having a length equal to or greater than  $50\ \mu\text{m}$ .

15. The plasma display panel as set forth in claim 1, wherein said scanning and sustaining electrodes are formed separately in each of said display cells, and are electrically connected to one another, respectively, through a bus electrode, said bus electrode comprising a first bus electrode formed above said high-capacity portion and extending in said first direction, and a second bus electrode extending in said first direction above ends of said scanning and sustaining electrodes which end is located remote from said discharge gap.

16. The plasma display panel as set forth in claim 1, wherein said high-capacity portion passes centers of said scanning and sustaining electrodes in said second direction.

5 17. The plasma display panel as set forth in claim 1, wherein a drive voltage increasing with the lapse of time is applied to said scanning electrode in a priming period in which a serrate priming pulse which is positive relative to said sustaining electrode is applied to said scanning electrode, and a serrate priming pulse negative relative to said scanning electrode is applied to said sustaining  
10 electrode.

18. The plasma display panel as set forth in claim 1, wherein said plasma display panel is driven in a drive sequence including, in an order,

(a) a priming period in which a voltage of said scanning electrode is raised  
15 by means of a pulse having a ramp waveform positive relative to said sustaining and data electrodes, said voltage is lowered by means of a pulse having a ramp waveform negative relative to said sustaining and data electrodes after said voltage is stopped being raised, and a voltage of said sustaining electrode is raised in such a manner that a voltage of said sustaining electrode is positive  
20 relative to a voltage of said scanning electrode while said voltage is being lowered,

(b) an address period in which whether a light is emitted or not for each of said display cells, and

(c) a sustaining discharge period in which a luminance is determined.  
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19. A plasma display apparatus comprising:

an analog interface which converts a received analog image signal into a digital image signal, and outputs the thus converted digital image signal; and  
a plasma display module which includes a plasma display panel, and

outputs images in accordance with said digital image signal received from said analog interface,

said plasma display panel including:

(a) a first substrate;

5 (b) a second substrate spaced away from and facing said first substrate;

(c) at least one scanning electrode formed on a surface of said first substrate which surface faces said second substrate, and extending in a first direction;

(d) at least one sustaining electrode formed on said surface of said first substrate and extending in parallel with said scanning electrode;

10 (e) a dielectric layer formed on said first substrate, covering said scanning and sustaining electrodes therewith; and

(f) at least one data electrode formed on a surface of said second substrate which surface faces said first substrate, and extending in a second direction perpendicular to said first direction,

15 display cells being arranged at intersections of said scanning and sustaining electrodes and said data electrode,

each of said scanning and sustaining electrodes being comprised of a transparent electrode,

said dielectric layer being comprised of a transparent dielectric layer,

20 said dielectric layer having a high-capacity portion having a capacity higher than that of the rest of said dielectric layer, said high-capacity portion being spaced away from a discharge gap and extending in said first direction,

each of said scanning and sustaining electrodes being formed with an opening between said discharge gap and said high-capacity portion.

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